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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/045,458	BAUMGARTE ET AL.	
	Examiner	Art Unit	
	Con P. Tran	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-77* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 6/26/06 & 10/02/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-10, 12-23, and 25-72-77** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ten Kate U.S. Patent 5,878,080 in view of Shaffer et al. U.S. Patent 6,973,184 (hereinafter, "Shaffer"), and further in view of Moon U.S. Patent 5,825,776 (hereinafter, "Moon").

Regarding **claim 27**, Ten Kate teaches a method for encoding C (left, right and center channels, Figs.1a, 2) input audio channels to generate E (composite signal, combination signal; col. 2, lines 47-56) transmitted audio channels, the method (see Figs. 1a, 2, and respective portions of the specification), comprising:

providing two or more of the C input channels (3 channels, col. 2, lines 28-38) in a frequency domain (subband coding, col. 6, lines 47-59);

generating data (data compression, encoder; Figs. 1a, 2; col. 3, lines 61-66) for each of one or more different frequency bands in the two or more input channels in the frequency domain (col. 4, lines 20-35); and

combining (combining unit) the C input channels to generate the E (composite signal, combination signal) transmitted channels, where $C > E \geq 1$ (e.g., composite signal, combination signal; col. 2, lines 47-56) such that an audio decoder is enabled to generate more than E different playback audio channels based on the E transmitted channels (i.e., decoder is capable of also retrieving the one original signal transmitted and can retrieve the other two original signal, col. 2, lines 56-65).

Ten Kate further discloses generating data stream for transmission signal (col. 4, lines 20-35) . However, Ten Kate does not explicitly disclose data stream including one or more cue codes.

Shaffer discloses encoding/decoding systems and methods for packet voice conferencing including a directional cue for each speaker on the other end of the conference (col. 1, line 60 - col. 2, line 7; Figs. 4, 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated encoding/decoding systems of Shaffer teaching with 3-channel encoder/2-channel decoder of Ten Kate so that generating one or more cue codes as claimed for purpose of decreasing bandwidth requirement, as suggested by Shaffer in column 3, lines 46-47).

Ten Kate in view of Shaffer, as modified, teaches mixing input channels but fails to explicitly specify downmixng input channels.

Moon discloses a radiotelephonic communication system in which downmixer (156, Fig. 4) connects to receiver portion (152, Figs. 3, 4) to downmixing input signal (see col. 7, lines 42-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a downmixer of Moon teaching with encoding C input audio channels of Ten Kate in view of Shaffer so that to obtain a downmixer as claimed for purpose of utilizing a protocol scheme to transmit and received voice and data signals, as suggested by Moon in column 3, lines 40-42).

downmixing the C input channels to generate the E transmitted channels, where C>E21. such

that an audio decoder is enabled to generate more than E different playback audio channels based on the

E transmitted channels and the one or more cue codes.

Regarding **claim 28,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 27. Ten Kate, as modified, further comprising formatting the E transmitted channels (composite signal, combination signal; col. 2, lines 47-56) and the one or more cue codes into a transmission format such that:

the format enables a first audio decoder (mono decoder, col. 2, lines 39-40) having no knowledge of the existence of the one or more cue codes (in combination signal) to generate E playback audio channels based on the E transmitted channels and independent of the one or more cue codes (mono output, col. 4, lines 36-39); and

the format enables a second audio decoder (standard stereo decoder, col. 2, lines 50-56) having knowledge of the existence of the one or more cue codes (in combination signal) to generate more than E playback audio channels based on the E

transmitted channels and the one or more cue codes (col. 2, lines 50-59; col. 5, lines 17-24).

Regarding **claim 29,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 28. Ten Kate, as modified, further teaches wherein the format enables the second audio decoder (standard stereo decoder, col. 2, lines 50-56) to generate C playback audio channels (two channels) based on the E transmitted channels and the one or more cue codes (col. 2, lines 50-59; col. 5, lines 17-24).

Regarding **claim 30,** Claim 30 is met since E=1(see Ten Kate, mono output, col. 4, lines 36-39).

Regarding **claim 31,** Claim 31 is met since E>1(see Ten Kate, stereo output, col. 4, lines 36-39; C=3-channel audio input; col. 2, lines 28-32).

Regarding **claim 32,** Claim 32 is met since each of the E transmitted channels is based on two or more of the C input channels (see Ten Kate, C=3-channel audio input; col. 2, lines 28-32).

Regarding **claim 33,** Shaffer, as modified, further teaches wherein the one or more cue codes comprise one or more of inter-channel level difference data (ICLD), i.e.,

ILD (interaural level differences) and inter-channel time difference (ICTD) data i.e., ITD (interaural time delay; see Shaffer, col. 4, lines 38-44).

Regarding **claim 34,** Shaffer, as modified, further teaches wherein the one or more cue codes comprise ICLD data, i.e., ILD (interaural level differences) and ICTD, i.e., ITD (interaural time delay, see Shaffer, col. 4, lines 38-44) data.

Regarding **claim 35,** Shaffer, as modified, further teaches the invention of claim 27, wherein the downmixing comprises, for each of one or more different frequency bands, downmixing the two or more input channels in the frequency domain into one or more downmixed channels in the frequency domain (the decoder can apply the balance parameter to all received frequencies; Shaffer, col. 5, lines 56-67).

Regarding **claim 36,** Shaffer, as modified, further teaches the invention of claim 35, wherein the downmixing further comprises converting the one or more downmixed channels from the frequency domain into one or more of the transmitted channels in the time domain (time shifting, Shaffer, col. 6, lines 18-26).

Regarding **claim 1,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 27, wherein:

the one or more cue codes comprise a plurality of scene parameters, i.e., ILD (interaural level differences) and i.e., ITD (interaural time delay; see Shaffer, col. 4, lines 38-44).

the E transmitted channels comprise a combined audio signal (composite signal, see Ten Kate, col. 2, lines 47-56);

generating the one or more cue codes and downmixing (see Moon, col.7, lines 42-57) the C input channels comprises converting the input audio signals into the combined audio signal and the plurality of auditory scene parameters (i.e., ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44); and

further comprising embedding the auditory scene parameters into the combined audio, signal to generate an embedded audio signal (TRM signal, Fig. 2; see Ten Kate col. 10, line 66 – col. 11, line 9), such that:

a first receiver that is aware of the existence of the embedded auditory scene parameters (standard stereo decoder, see Ten Kate, col. 2, lines 50-56) can extract the auditory scene parameters from the embedded audio signal and apply the extracted auditory scene parameter to synthesize an auditory scene (col. 2, lines 50-59; see Ten Kate, col. 5, lines 17-24), and

a second receiver (mono decoder, see Ten Kate, col. 2, lines 39-40) that is unaware of the existence of the embedded auditory scene parameters can process the embedded audio signal (TRM signal, see Ten Kate, Fig. 2; col. 10, line 66 – col. 11, line

9) to generate an output audio signal, where the embedded auditory scene parameters are transparent to the second receiver (see Ten Kate, mono output, col. 4, lines 36-39).

Regarding **claim 2,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 1. Shaffer, as modified, further discloses wherein the plurality of auditory scene parameters comprise two or more different sets of one or more auditory scene parameters (i.e., ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44), wherein each set of auditory scene parameters corresponds to a different frequency band (subband coding, see Ten Kate, col. 6, lines 47-59) in the combined audio signal (composite signal, combination signal; col. 2, lines 47-56) such that the first receiver (standard stereo decoder, see Ten Kate, col. 2, lines 50-56) synthesizes the auditory scene by (a) dividing an input audio signal into a plurality of different frequency bands (subband coding, see Ten Kate, col. 6, lines 47-59); and (b) applying the two or more different sets of one or more auditory scene parameters (ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44) to two or more of the different frequency bands (subband coding, see Ten Kate, col. 6, lines 47-55) in the input audio signal to generate two or more synthesized audio signals of the auditory scene (including S_l, S_r, see Figs. 1a, 2) wherein for each of the two or more different frequency bands, the corresponding set of one or more auditory scene parameters is applied to the input audio signal as if the input audio signal corresponded to a single

audio source in the auditory scene (S_l, S_r, M_o are applied to L, R, C; see Figs. 1a, 2, 3, 4; col. 4, line 40 – col. 5, line 15).

Regarding **claim 3,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 2. Shaffer, as modified, further teaches wherein each set of one or more auditory scene parameters corresponds to a different audio source in the auditory scene , i.e., ILD (interaural level differences) and i.e., ITD (interaural time delay; see Shaffer, col. 4, lines 38-44).

Regarding **claim 4,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 2. Shaffer, as modified, further teaches wherein, for at least one of the sets of one or more auditory scene parameters, at least one of the auditory scene parameters corresponds to a combination of two or more different audio sources in the auditory scene that takes into account relative dominance of the two or more different audio sources in the auditory scene (by using cross-correlation, see Shaffer, Fig. 7, col. 8, lines 43-57).

Regarding **claim 5,** the invention of claim invention of claim 2. Shaffer, as modified, further teaches wherein the two or more synthesized audio signals comprise left and right audio signals of a binaural signal corresponding to the auditory scene (col. 4, lines 23-32).

Regarding **claim 6,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 2. Ten Kate, as modified, further teaches wherein the two or more synthesized audio signal comprise three or more signals of a multi-channel audio signal corresponding to the auditory scene (Fig. 3; col. 5, lines 52-61).

Regarding **claim 7,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 1. Ten Kate, as modified, further teaches wherein the combined audio signal corresponds to a combination of two or more different mono source signals (composite signal from three original signals, see Ten Kate, col. 2, lines 33-56), wherein the two or more different frequency bands are selected by comparing magnitudes of the two or more different mono source signals (ILD, compare signal strength, see Shaffer, col. 5, lines 49-56), wherein, for each of the two or more different frequency bands, one of the mono source signals dominates the one or more other mono source signals (by using cross-correlation, see Shaffer, Fig. 7, col. 8, lines 43-57).

Regarding **claim 8,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim invention of claim 1. Ten Kate, as modified, further teaches, wherein the combined audio signal corresponds to a combination of left and right audio signals of a binaural signal (composite signal, see Ten Kate, col. 2, lines 47-56; col. 3, lines 61-66), wherein each different set of one or more auditory scene

parameters (ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44) is generated by comparing the left and right audio signals in a corresponding frequency bands (subband coding, see Shaffer, col. 3, lines 43-47).

Regarding **claim 9,** Shaffer, as modified, further teaches wherein the auditory scene parameters comprise one or more of an interaural level difference, an interaural time delay, and a head-related transfer function (ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44).

Regarding **claim 10,** Shaffer, as modified, further teaches wherein step (b) comprises the step of applying a layered coding technique (col. 3, lines 63-67) in which stronger error protection (col. 1, lines 21-24) is provided to the combined audio signal than to the auditory scene parameters when generating the embedded audio signal (voice packet 50, Fig. 4); encoder (24) and decoder (30) work as pair such have been obvious that errors due to transmission over a lossy channel will tend to affect the auditory scene parameters before affecting the combined audio signal to improve the probability of the first receiver to process at least the combined audio signal (Fig. 7, col. 8, lines 43-50).

Regarding **claim 14,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 1, further teaches comprising steps of:

receiving the embedded audio signal comprising the combined audio signal embedded with the plurality of auditory scene parameters (i.e., ILD interaural level differences and ITD, interaural time delay; see Shaffer, col. 4, lines 38-44), wherein a receiver that is unaware of the existence of the embedded auditory scene parameters (mono decoder, see Ten Kate, col. 2, lines 39-40) can process the embedded audio signal to generate an output audio signal (see Ten Kate, mono output, col. 4, lines 36-39), where the embedded auditory scene parameters are transparent to the receiver (TRM signal, see Ten Kate, Fig. 2; col. 10, line 66 – col. 11, line 9)

extracting the auditory scene parameters from the embedded audio signal (col. 2, lines 50-59; see Ten Kate); and

applying the extracted auditory scene parameters to the combined audio signal to synthesize an auditory scene (col. 2, lines 50-59; see Ten Kate, col. 5, lines 17-24).

Regarding **claim 15,** this claim has similar limitations as Claim 2. Therefore it is rejected for the reasons set forth in the rejection of Claim 2.

Regarding **claim 16,** this claim has similar limitations as Claim 3. Therefore it is rejected for the reasons set forth in the rejection of Claim 3.

Regarding **claim 17,** this claim has similar limitations as Claim 4. Therefore it is rejected for the reasons set forth in the rejection of Claim 4.

Regarding **claim 18,** this claim has similar limitations as Claim 5. Therefore it is rejected for the reasons set forth in the rejection of Claim 5.

Regarding **claim 19,** this claim has similar limitations as Claim 6. Therefore it is rejected for the reasons set forth in the rejection of Claim 6.

Regarding **claim 20,** this claim has similar limitations as Claim 7. Therefore it is rejected for the reasons set forth in the rejection of Claim 7.

Regarding **claim 21,** this claim has similar limitations as Claim 8. Therefore it is rejected for the reasons set forth in the rejection of Claim 8.

Regarding **claim 22,** this claim has similar limitations as Claim 9. Therefore it is rejected for the reasons set forth in the rejection of Claim 9.

Regarding **claim 23,** this claim has similar limitations as Claim 10. Therefore it is rejected for the reasons set forth in the rejection of Claim 10.

Regarding **claim 55,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 27, further comprising:

upmixing (upmixer 158, Fig. 4; see Moon, col. 7, lines 42-57), for each of one or more different frequency bands (subband coding, Ten Kate, col. 6, lines 47-59),

one or more of the E transmitted channels (e.g., composite signal, combination signal; Ten Kate, col. 2, lines 47-56) in a frequency domain to generate two or more of M playback channels in the frequency domain (3 channels, Ten Kate, col. 2, lines 28-38);

applying the one or more cue codes to each of the one or more different frequency bands in the two or more playback channels in the frequency domain to generate two or more modified channels (see Shaffer, col. 1, line 60 - col. 2, line 7; Figs. 4, 8); and

converting the two or more modified channels from the frequency domain into a time domain (see Shaffer, col. 4, lines 11-22).

Regarding **claim 56,** Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 55. Shaffer, as modified, further comprising:

prior to upmixing, converting the one or more of the E transmitted channels from the time domain to the frequency domain (decoding of subband coding, see Shaffer, col. 3, lines 38-50).

Regarding **claim 57,** Claim 57 is met since E=1(see Ten Kate, mono output, col. 4, lines 36-39).

Regarding **claim 58,** Claim 58 is met since E>1(see Ten Kate, stereo output, col. 4, lines 36-39; M=3-channel audio input; col. 2, lines 28-32).

Regarding **claim 59,** Claim 59 is met since each of the E transmitted channels is based on two or more of the M input channels (see Ten Kate, M=3-channel audio input; col. 2, lines 28-32) and at least one code cue (i.e., ILD, interaural level differences and ITD, interaural time delay, see Shaffer, col. 4, lines 38-44) .

Regarding **claim 60,** Shaffer, as modified, further teaches wherein the one or more cue codes comprise one or more of inter-channel level difference data (ICLD), i.e., ILD (interaural level differences) and inter-channel time difference (ICTD) data i.e., ITD (interaural time delay; see Shaffer, col. 4, lines 38-44).

Regarding **claim 61,** Shaffer, as modified, further teaches wherein the one or more cue codes comprise ICLD data, i.e., ILD (interaural level differences) and ICTD, i.e., ITD (interaural time delay, see Shaffer, col. 4, lines 38-44) data.

Regarding **claim 62,** Shaffer, as modified, further teaches the invention of claim 55, wherein the upmixing comprises, for each of one or more different frequency bands, downmixing the two or more input channels in the frequency domain into one or more downmixed channels in the frequency domain (the decoder can apply the balance parameter to all received frequencies; Shaffer, col. 5, lines 56-67).

Regarding **claim 73,** Shaffer, as modified, further teaches the invention of claim 27, wherein the method comprises generating, in the frequency domain, ICTD data as

one of the one or more cue codes (interaural time delay, for left channel, right channel, see Shaffer, col. 4, lines 11-67).

Regarding **claim 37,** this claim merely reflects the means-plus-function to the method claim of claim 27 and is therefore rejected for the same reasons.

Regarding **claim 12,** this claim merely reflects the means-plus-function to the method claim of claim 1 and is therefore rejected for the same reasons.

Regarding **claim 25,** this claim merely reflects the means-plus-function to the method claim of claim 14 and is therefore rejected for the same reasons.

Regarding **claim 74,** this claim merely reflects the means-plus-function to the method claim of claim 73 and is therefore rejected for the same reasons.

Regarding **claim 63,** this claim merely reflects the means-plus-function to the method claim of claim 55 and is therefore rejected for the same reasons.

Regarding **claims 38-47, 64-71, and 75** these claims merely reflect the apparatus to the method claim of claims 27-36, 55-62 and 73 and are therefore rejected for the same reasons.

Regarding **claim 48,** Claim 48 is met since Ten Kate in view of Shaffer, and further in view of Moon, as modified, further teaches wherein:

the apparatus is a system selected from the group consisting of a digital video recorder, a digital audio recorder, a computer, a satellite transmitter, a cable transmitter, a terrestrial broadcast transmitter, and an entertainment system (laptop computer, see Shaffer, col. 2, lines 8-17); and

the system comprises the two or more filter banks (34L, 34R, Fig. 3; see Shaffer, col. 5, lines 61-67), the code estimator (parameter estimator 42, Fig. 3; see Shaffer, col. 6, lines 9-17), and the downmixer (156, Fig. 4; see Moon, col. 7, lines 42-57)

Regarding **claim 72,** Claim 72 is met since Ten Kate in view of Shaffer, and further in view of Moon, as modified, further teaches wherein:

the apparatus is a system selected from the group consisting of a digital video recorder, a digital audio recorder, a computer, a satellite transmitter, a cable transmitter, a terrestrial broadcast transmitter, and an entertainment system (laptop computer, see Shaffer, col. 2, lines 8-17); and

the system comprises the two or more filter banks (34L, 34R, Fig. 3; see Shaffer, col. 5, lines 61-67), the code estimator (parameter estimator 42, Fig. 3; see Shaffer, col. 6, lines 9-17), and the upmixer (158, Fig. 4; see Moon, col. 7, lines 42-57)

Regarding **claim 49,** this claim has similar limitations as Claim 27. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon

for the reasons set forth in the rejection of Claim 27. It is noted Shaffer, as modified, discloses encoded bitstream (see Shaffer, col. 5, line 61 – col. 6, line 8)

Regarding **claim 50,** this claim has similar limitations as Claim 28. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon for the reasons set forth in the rejection of Claim 28.

Regarding **claim 51,** this claim has similar limitations as Claim 29. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon for the reasons set forth in the rejection of Claim 29.

Regarding **claim 76,** this claim has similar limitations as Claim 73. Therefore it is interpreted and rejected for the same reasons.

Regarding **claim 52,** this claim has similar limitations as Claim 27. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon for the reasons set forth in the rejection of Claim 27. It is noted Shaffer, as modified, discloses encoded bitstream (see Shaffer, col. 5, line 61 – col. 6, line 8)

Regarding **claim 53,** this claim has similar limitations as Claim 28. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon for the reasons set forth in the rejection of Claim 28.

Regarding **claim 54,** this claim has similar limitations as Claim 29. Therefore it is interpreted and rejected under Ten Kate in view of Shaffer, and further in view of Moon for the reasons set forth in the rejection of Claim 29.

Regarding **claim 77,** this claim has similar limitations as Claim 73. Therefore it is interpreted and rejected for the same reasons.

3. **Claims 11 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ten Kate U.S. Patent 5,878,080 in view of Shaffer et al. U.S. Patent 6,973,184 (hereinafter, "Shaffer"), further in view of Moon U.S. Patent 5,825,776, and further in view of Jafarkhani et al. U.S. Patent 6,823,018 (hereinafter, "Jafarkhani").

Regarding **claim 11**, Ten Kate in view of Shaffer, and further in view of Moon teaches the invention of claim 1. Ten Kate, as modified, further teaches channel coding the serial datastream (col. 4, lines 23-30), a 2-channel information stream (col. 13, lines 2-4) in which in which the auditory scene parameters and the combined audio signal are both divided into two or more streams, wherein each stream divided from the auditory scene parameters is embedded into a corresponding stream divided from the combined audio signal to form a stream of the embedded audio signal (TRM signal, see Ten Kate, Fig. 2; col. 10, line 66 – col. 11, line 9), such that the two or more streams of the embedded audio signal may be transmitted over two or more different channels to the

first receiver (standard stereo decoder, see Ten Kate, col. 2, lines 50-56) such that the first receiver is able to synthesize the auditory scene using extracted auditory scene parameters (col. 5, lines 17-24) when errors result from transmission of one or more of the streams of the embedded audio signal over one or more lossy channels (MPEG-1, col. 6, lines 47-59; col. 12, lines 19-29).

However, Ten Kate in view of Shaffer, and further in view of Moon does not explicitly disclose applying multi-descriptive coding technique and using relative coarse resolution.

Jafarkhani discloses a multiple description coding communication system in which coarse (resolution) quantizer being used (col. 2, lines 28-49; col. 5, lines 38-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a multiple description coding using coarse resolution of Jafarkhani teaching with coding C input audio channels of Ten Kate, Shaffer, Moon in combination so that to apply a multiple description coding as claimed for purpose of providing reliably encoding and decoding information, as suggested by Jafarkhani in column 3, lines 7-9.

Regarding **claim 24,** this claim has similar limitations as Claim 11. Therefore it is rejected for the reasons set forth in the rejection of Claim 11.

Response to Amendment

4. With respect to objection to the claims, the claims have been amended. Accordingly, the objection is removed.

5. With respect to objection to the drawings, the drawings have been amended. Accordingly, the objection is removed.

Response to Arguments

6. With respect to objection to the specification, Applicant's argument is persuasive. Accordingly, the objection is removed.

7. Applicant's arguments with respect to claims 1-72 have been considered but are moot in view of the new grounds of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is (571) 272-7532. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Vivian C. Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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cpt CPJ
December 26, 2006

XU MEI
PRIMARY EXAMINER